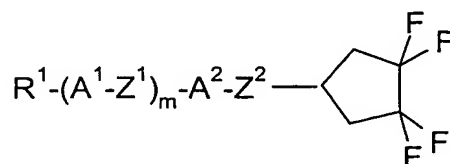



Patent Claims

1. 3,3,4,4-Tetrafluorocyclopentane compounds of the formula I



10 in which

$R^1$  is H, or an alkyl radical having up to 15 carbon atoms which is unsubstituted, monosubstituted by CN or  $CF_3$  or at least monosubstituted by halogen, where, in addition, one or more  $CH_2$  groups in these radicals may each, independently of one another, be replaced by -O-, -CH=CH-, , -CO-, -CO-O-, -O-CO- or -O-CO-O- in such a way that O atoms are not linked directly to one another,

20  $A^1$  and  $A^2$  are each, independently of one another,

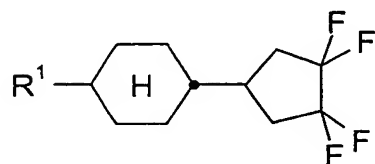
- (a) a trans-1,4-cyclohexylene radical, in which, in addition, one or more non-adjacent  $CH_2$  groups may be replaced by -O- and/or -S-,
- 25 (b) a 1,4-phenylene radical, in which, in addition, one or two CH groups may be replaced by N,
- (c) 1,4-cyclohexenylene,
- 30 (d) a radical from the group consisting of 1,4-bicyclo[2.2.2]-octylene, piperidine-1,4-diyl, naphthalene-2,6-diyl, decahydronaphthalene-2,6-diyl and 1,2,3,4-tetrahydronaphthalene-2,6-diyl,
- 35

where the radicals (a) to (d) may be substituted by one or more fluorine atoms,

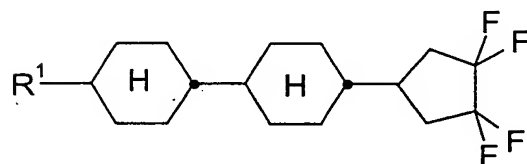
$Z^1$  and  $Z^2$  are each, independently of one another,  $-\text{CO}-\text{O}-$ ,  $-\text{O}-\text{CO}-$ ,  
 $-\text{CH}_2\text{O}-$ ,  $-\text{OCH}_2-$ ,  $-\text{CH}_2\text{CH}_2-$ ,  $-\text{CH}=\text{CH}-$ ,  $-\text{C}\equiv\text{C}-$ ,  $-(\text{CH}_2)_4-$ ,  
 $-\text{CF}_2\text{O}-$ ,  $-\text{OCF}_2-$ ,  $-\text{C}_2\text{F}_4-$ ,  $-\text{CH}=\text{CH}-\text{CH}_2\text{CH}_2-$  or a single  
bond, and

$m$  is 0, 1 or 2.

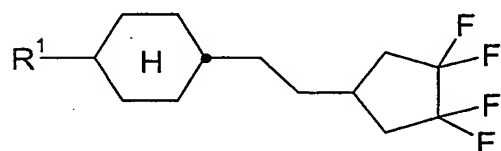
## 2. Compounds of the formulae I1-I30



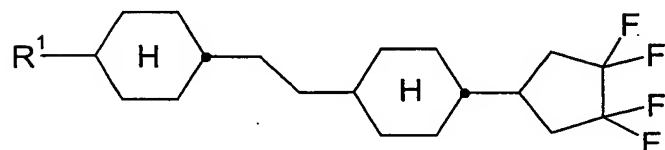
I1



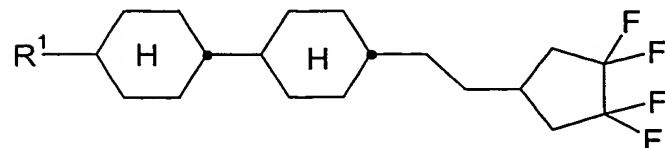
I2



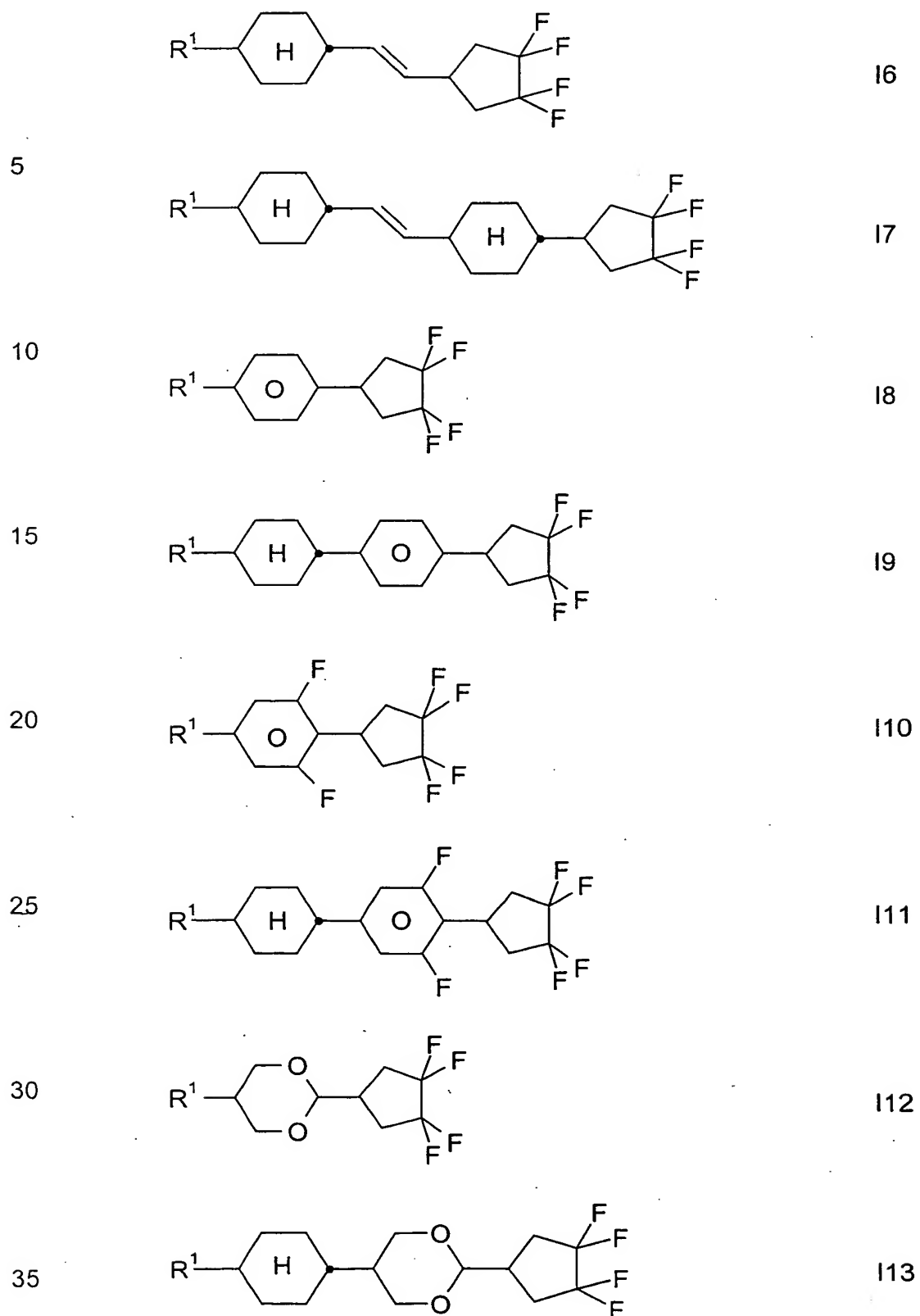
I3

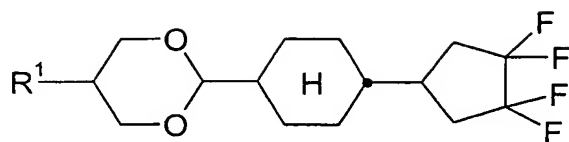


I4

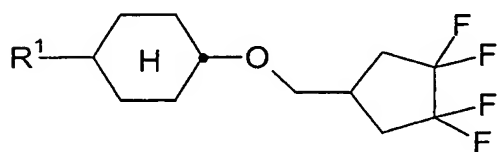


I5

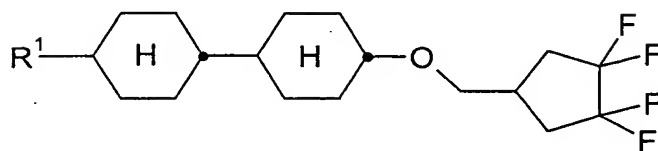




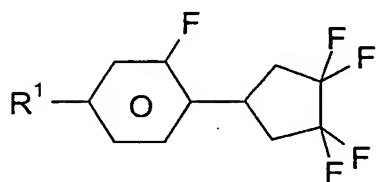
I14



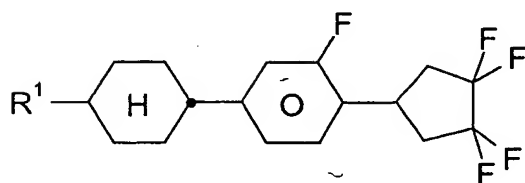
I15



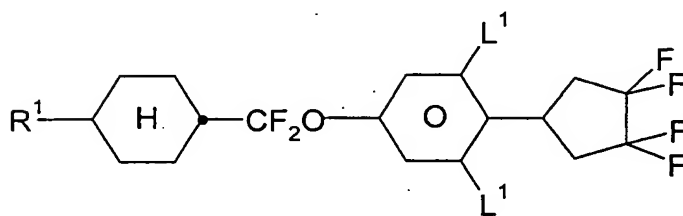
I16



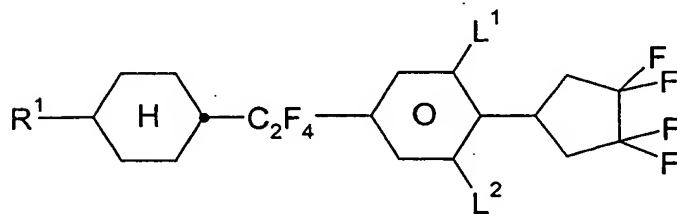
I17



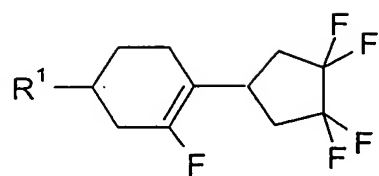
I18



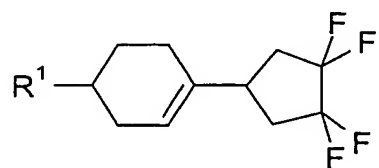
I19



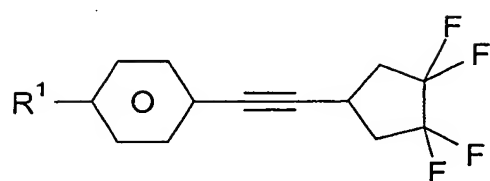
I20



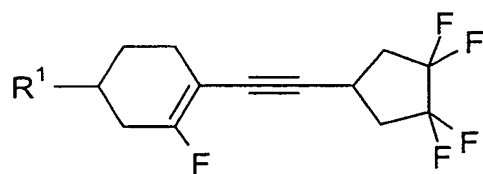
I21



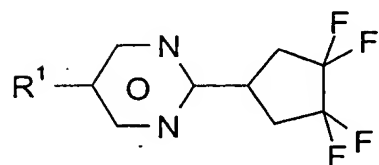
I22



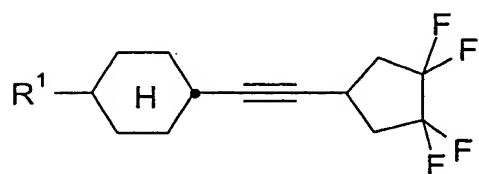
I23



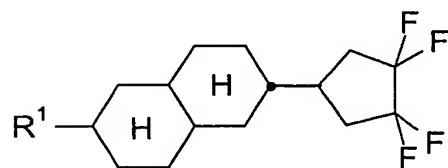
I24



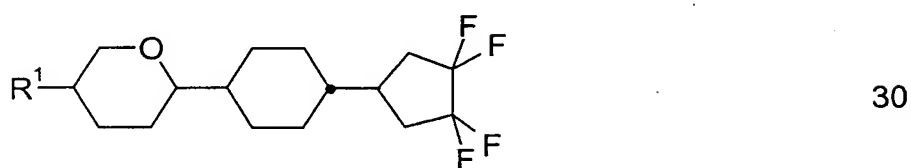
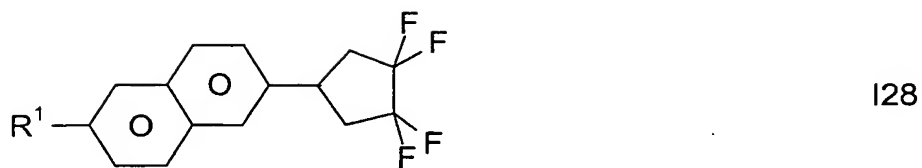
I25



I26



I27



in which R<sup>1</sup> is as defined in Claim 1, and L<sup>1</sup> and L<sup>2</sup> are each, independently of one another, H or F.

- 20
3. Compounds according to Claim 1 or 2, characterised in that R<sup>1</sup> is alkyl, alkoxy, alkenyl or alkenyloxy having up to 7 carbon atoms.
- 25
4. Use of compounds of the formula I as components of liquid-crystalline media.
5. Liquid-crystalline medium having at least two liquid-crystalline components, characterised in that it comprises at least one compound of the formula I.
- 30
6. Liquid-crystal display element, characterised in that it contains a liquid-crystalline medium according to Claim 5.
7. Electro-optical display element, characterised in that it contains, as dielectric, a liquid-crystalline medium according to Claim 5.